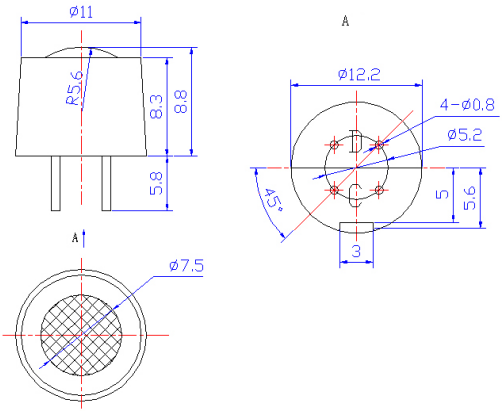
MC101 Catalytic Gas Sensor

MC101 operate on the catalytic combustion principle, and its two arms of electric bridge consists of a test element and a compensate element. The resistance of the test element rised when meeting the combustible gas, in the same time, the output voltage of the bridge changed, the voltage variable is rised in direct proportion as the gas concentration, the compensate element as a reference, and compensate of temperaturer and humidity.

Feature

*The bridge output in liner
*Fast response
*Good reproducibility and selectivity
*Working steability
*Excellent resistance of H2S、silicon poisoning

Configuration



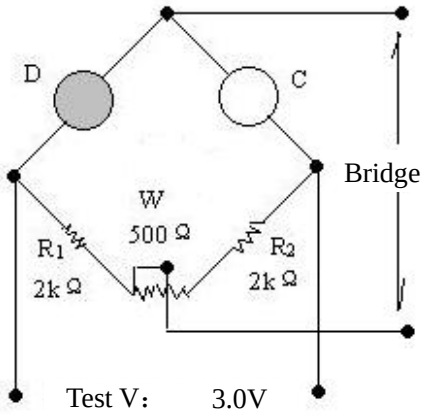
Application

Application in gas concentration detection in industrial field such as natural gas, LPG, coal gas, alkane ect combustible gas, and gasoline, Alcohol, ketone, benzene ect organic solvent;
Combustible gas leaking alarm or detectors;
Gas concentration meter.

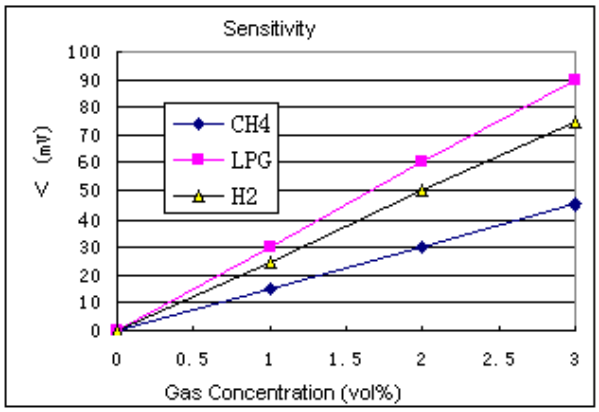
Specification

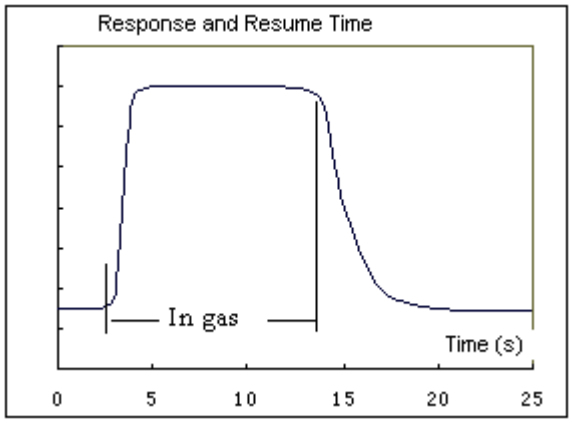
Type		MC101
Series		Catalytic
Standard cover		Plastic
Working voltage(V)		3.0±0.1
Working current(mA)		110±10
Sensitivity(mV)	1% Methane	25~50
	1% Butane	30~50
	1% Hydrogen	25~45
Liner（%）		≤5
Test range（%LEL）		0~100
Response time (90%)		Less than 10s
Recovery time (90%)		Less than 30s
Working envirenment		-40－+70℃ less than 95%RH
Storage		-20—+70℃ less than 95%RH
Size（mm）		Φ12mm×8mm

Basic testing circuit

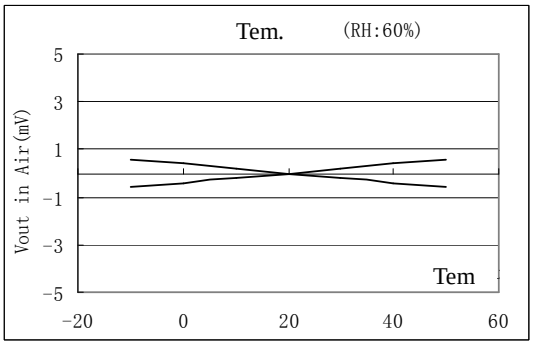


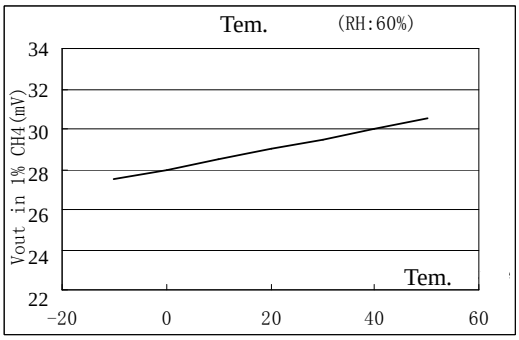
Sesitivity、response and recovery





Output signal changed by Tem.





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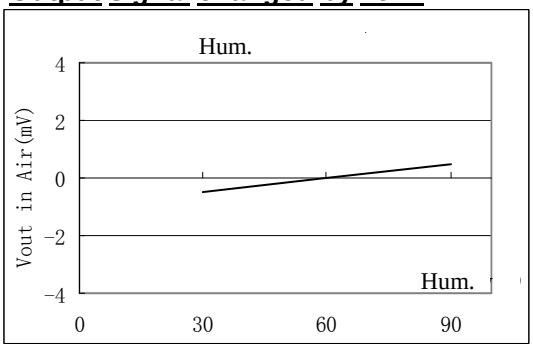
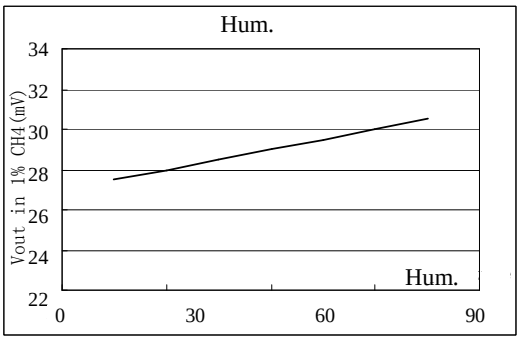
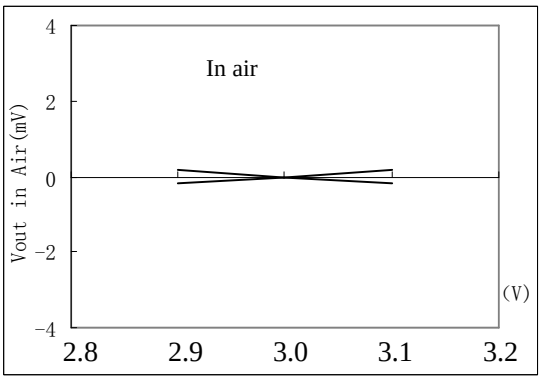
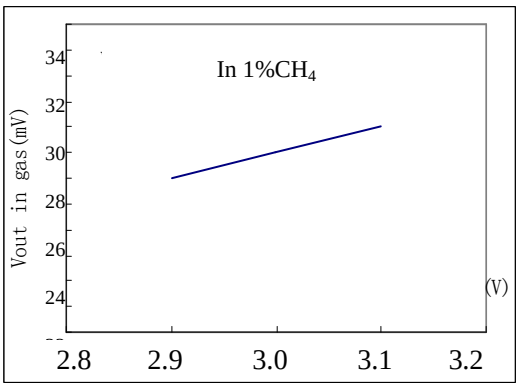




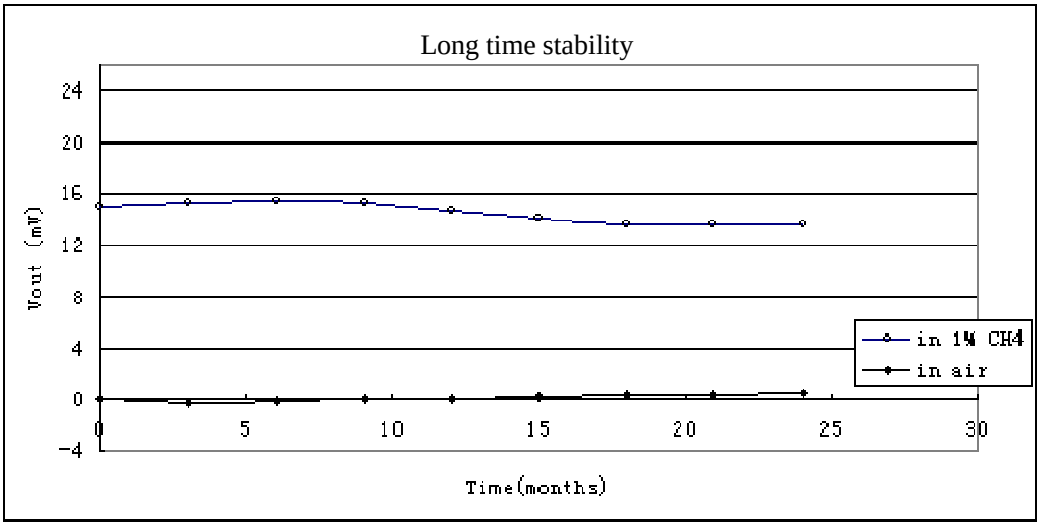
Output signal changed by voltage





Long time stability

The drift in air per year is less than ±2mV, in 1%CH_4 is less than ±2mV. For a short period storage (in 2 weeks), the sensor need 30mins'preheating to stabilize. for more than one year storage, it need more than 5 hours peheating.



Notice

1 Must be avoid

1.1 Under the organic silicon

If the sensor face adsorb the organic silicon, its sensing elements will be wraped,and restrained its sensitivity, also can not recover.The sensor must be avoid in the silicon, fixature, rubber, oily or other plastic additive of silicon.

1.2 Under the High causticity place

The sensor is under the high concentration causticity such as H_2S, SO_X, Cl_2, HCl ect, it not only result the heating material and the sensor lead causticity or broken, but also changed the performance of the sensing material.

1.3 Pollution in alkali, alkali metal salt, halogen

The sensor performance reduced by the pollution of the alkali metal especially brine spray,and under the halogen such as Fluorin.

1.4 Meeting water

If spatter water or dip in the water, it will result ot its sensitivity reduced.

1.5 Icing

If water icing on the sensor face, it will result that the sensing material smash and lose Its sensitivity.

1.6 High voltage

If the voltage is higher than the value of the sensor or the heater, though the sensor is not broken, it will result that the lead or the heater broken, and make its sensitivity reduced.

2 Avoid as possible

2.1 Water coagulation

In the home, light coagulate water will impact the sensor performance not too much, but if the water coagulated on the face and for some time, the sensitivity will be reduced.

2.2 In the high concentration gas

Whether the sensor is electrify, the sensor storaged in the high concentration gas for a long Time, it will impact its sensitivity.

2.3 Long time storage

The sensor is storaged for a long time without electrify, its resistance will be drift ,
And this case is of the storage environment. The sensor must be storage in the seal bag without
Any silicon. The sensor is not electrified for storage, it must be electrify for a long time before using.

2.4 under the extremity place for a long time

Wether the sensor is electrify, under the extremity place for a long time such as high temperature,high humidity, or high pollution ext, it will impact the sensor performance heavily.

2.5 Vabration

Vabration frequently or excessly, it will impact the sensor lead broken. And the vibration also will be happened in the transportion or assembling or welding process.

2.6 Concussion

If the sensor is striked heavily, it will make the lead broken.

2.7 Using

It is better of weldling by hand for a sensor.
If you used the wave welding, please satisfied the conditions as below:
2.7.1 Welding assist: Include the least rosin
2.7.2 Speed:1-2m/munite
2.7.3 Preheating temperature:100±20℃
2.7.4 Welding temperature: 250±10℃
2.7.5 1time passed the machine

If you disobey the conditions, it will impact the sensor sensitivity.